

ORIGINAL

Intussusception among Children in South-West Region of Saudi Arabia: A Retrospective Study of 22 Patients

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ABSTRACT

Records of the 22 patients under 15 years of age who presented with small bowel obstruction due to intussusception to King Fahad Hospital at Al Baha, south-west Saudi Arabia, between October 1981 and August 1992, were studied.

Seventeen trials of hydrostatic enema reduction were performed with a success rate of 41%; only 13 of them received covering antibiotics prior to the procedure. Ten patients had signs of small bowel obstruction, six of whom had hydrostatic reduction trial which succeeded in one patient only.

During surgical reduction of intussusception, incidental appendectomy was performed on 9 out of the 17 patients. The other eight patients who retained their appendix did not show any signs of acute appendicitis while still in hospital.

From this study, we conclude that incidental appendectomy is not a mandatory procedure during surgical reduction of intussusception. We also recommend open reduction of intussusception in the presence of clinical and radiological signs of small intestinal obstruction.

Intussusception is the most common cause of small bowel obstruction in children between the age of two months and five years¹. The incidence gradually declines after the first year of life to become uncommon in children after the age of five years².

Although the aetiology of primary intussusception is not precisely known, its occurrence increases after different conditions such as gastroenteritis and upper respiratory tract infections. It has been reported in identical twins, father, son and siblings. About 5% of the cases may be secondary to a "leading point" of which lymphoma is not rare³.

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The classic triad at presentation - vomiting, abdominal pain and bleeding per rectum - is found in most patients but occasionally complaints such as rectal mass prolapse, sleepy infant or symptoms of other co-existing illnesses are seen³.

Different modalities and techniques have been introduced over the past decade, apart from the use of barium and air media for diagnosis or reduction of intussusception eg. normal saline enema under ultrasound visualisation.

Whereas literature increasingly discusses the decreasing value of hydrostatic enema reduction in patients with small intestinal obstruction, little is written about incidental appendectomy and the need for prophylactic antibiotics prior to enema reduction. We therefore undertook this study to review the pattern of the disease in the south-west region of Saudi Arabia.

METHODS

The records of all 22 patients with intussusception below the age of 15 years admitted to King Fahad Hospital at Al Baha between October 1981 and August 1992 inclusive were studied, with particular reference to clinical and radiological signs of small intestinal obstruction, incidental appendectomy and the use of prophylactic antibiotics before hydrostatic reduction.

RESULTS

There were 15 male patients, making the male:female ratio 2.1:1. All patients but one were Saudi. The age distribution of the patients was as follows: one newborn, one two month-old, sixteen 4-13 months, three toddlers and one 14 year-old.

Table 1

Mode of presentation of intussusception cases admitted at King Fahad Hospital, Al Baha, Saudi Arabia between October 1981 and August 1992

Presentation	No.	%
Abdominal distention	21	95.5
Vomiting	21	95.5
Rectal bleeding	14	63.6
Palpable abdominal mass	13	59
Rectal mass	6	27.2
Prolapsing intussusception	3	13.6

Other main finding include the following:

1. Diagnostic and therapeutic barium enema was tried on 17 patients and succeeded in 7. Two of the latter group underwent laparotomy.
2. No prophylactic antibiotics were given to four out of the five patients who did not have surgery; none developed signs of infection during the same hospitalisation period.
3. Ten patients showed radiological signs of small intestinal obstruction. Six of them had hydrostatic reduction trial, in it only one was successful.
4. Nine of the 17 patients who had laparotomy had incidental appendectomy during surgery. The patient distribution according to site of the head of intussusception was as follows: 77.2% of intussusceptions were ileo-caeco-colic type, 18% ileo-ileal and 4.5% colo-colic. Only one patient had a "Leading Point" which was Burkitt's lymphoma.
5. Recurrence was not encountered in any patient.

DISCUSSION

As 95.5% of our patients were Saudi and as King Fahad Hospital is the main referral centre in the south-west region of Saudi Arabia which has approximately 300,000 inhabitants, we established that two cases per year is the mean frequency of intussusception in this region. The male:female ratio in our study was 2.1:1 which matches the ratio in other studies^{3,7}.

The mode of presentation of our patients matched with other studies except for abdominal distention (95.5%) and prolapsing intussusception (13.6%), which were higher than expected when compared to other studies⁷. On looking at these three patients more closely, all were found to be around one year old. Two of them had 6 and 7 days history of symptoms before presentation. The third patient had a history of severe vomiting and diarrhoea for less than 24 hours before presenting to the hospital.

Reduction of intussusception by rectal air inflation has been widely practised in China since the 1961 report of Dr She in Shanghai, with satisfactory results in early cases among infants^{4,5}. We did not try this method on any of our patients. Seventeen of our patients had a trial of contrast enema reduction, which was successful in seven of them. However, as two of the latter group did not show signs of clinical improvement, they were taken to the operation room 24 hours after reduction but exploration failed to show any residual intussusception or a leading point. The explanation we can forward about

both is that there is a possibility of early recurrence and spontaneous reduction on induction of anaesthesia. The successful contrast enema reduction in our study was 7/22 ie. 31.8% of all patients, and as it was tried on 17 patients only, the success rate was therefore 41% of the reduction trial.

There is a special group of patients who show radiological signs of small bowel obstruction. In this group, the hydrostatic enema reduction usually fails, with a higher incidence of complication eg. perforation of the colon, especially if the patient is sick and less than four months old⁸. Of ten patients who had small bowel obstruction, six had hydrostatic enema reduction trial which was successful in only one. This supports the idea of not wasting valuable time performing enemas on this group of patients.

Pathologic leading point was found in one patient (4.5%) which goes in accordance with other studies^{3,9}. The reduction of intussusception due to leading point using hydrostatic enema is rarely achieved¹⁰. Our above mentioned patient was a four year old child who presented with an easily palpable abdominal mass in the right upper abdominal quadrant, rectal bleeding and multiple air/fluid levels. A trial of enema reduction failed to reduce the ileo-caecal intussusception, which was proved by laparotomy and histopathology to be Burkitt's lymphoma of the ileum. A high index of suspicion of an underlying lymphoma should be considered in any case of intussusception with a "leading point" as it constitutes about 17% of all leading point cases^{2,11}.

Transverse colo-colic intussusception constitutes 4.5% of cases in many series¹². Although leading point, undue mobility or poor fixation of transverse colon are known predisposing factors, none of these were found in the patient diagnosed to have this particular type of intussusception as proved by laparotomy.

The matter of incidental appendectomy during operative reduction of intussusception is not widely discussed in literature. Removal of the appendix is a matter of surgical choice and judgement³. Some decide upon its removal by the condition of the patient at operation¹³. Eight of our patients (47%) did not have their appendix removed at laparotomy, yet none of them developed signs or symptoms of appendicitis during the same hospitalisation period.

Prophylactic antibiotics were given to 18 out of 22 of our patients. Four of the five patients who did not need surgery were not given prophylactic antibiotics before the hydrostatic enema reduction. Since the

number of our cases was small, we think that a double blind study for the role of antibiotic prophylaxis before non-operative intussusception reduction is required to prove or exclude its efficacy.

Neither of our two patients under the age of two months had a successful hydrostatic pressure enema reduction, although the history was less than 24 hours. It is well known that because of the low success and high complication rates, the hydrostatic pressure enema is not recommended on this age group^{8,14}.

CONCLUSION

Incidental appendectomy is not a mandatory during operative reduction of intussusception. Patients with radiological signs of small bowel obstruction will not benefit from hydrostatic pressure enema reduction, especially young patients.

We conclude that there is a place for a prospective double blind study using prophylactic antibiotics before the hydrostatic pressure enema in a larger number of patients.

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